

INTRODUCTION

If you want to try out a new operating system, run old applications, develop software for different platforms or simply have a safe 'sandbox' for testing new software, virtualisation is a powerful tool. Virtualisation software lets you create virtual PCs that, to all intents and purposes, are complete PCs running as software inside your physical PC. You can do everything with a virtual computer that you can with a real one, including installing an operating system and applications. The best thing is that a virtual PC can't affect your real PC, so if the virtual computer's operating system crashes or gets a virus, your physical PC remains safe.

Virtual PCs let you run multiple operating systems. If you've got an application that worked on your old operating system but not your new one, running a compatible OS in a virtual PC means you can continue to use it.

There are plenty of virtualisation applications, but this month we're looking at Microsoft's free Virtual PC 2007.

Chris Finnamore
Labs Manager



chris@computershopper.co.uk

Run a virtual PC

Sometimes one PC just isn't enough, but with Virtual PC 2007 you can have as many as you like. Chris Finnamore explains

Our guide to virtualisation will tell you everything you need to know about setting up a virtual PC on a host PC with Microsoft's Virtual PC 2007. Other virtualisation programs are available, but Virtual PC 2007 has some useful features, including the ability to drag and drop files between the host and virtual PC.

The virtualisation software creates the bare bones of a virtual PC, complete with a rudimentary BIOS, but it won't do much without an operating system. Before you start, make sure you have the disc for the operating system you want to install. Once you've created your virtual PC, the procedure for installing the operating system is the same as it would be on a physical PC.

Bear in mind that a virtual PC has to share its RAM and hard disk space with the host PC, so you'll need enough spare RAM and hard disk space. For example, if you want to test out Windows Vista on a Windows XP PC, you'll need to assign at least 512MB of RAM and 20GB of hard disk space to the virtual PC. For both PCs to run smoothly, the host PC needs to have at least 1GB RAM and 30GB of free hard disk space. The virtual PC's operating system won't run as quickly as it would on a physical PC and, as it emulates graphics hardware, it won't be any good for intensive 3D games.

1 Download Virtual PC 2007 from www.microsoft.com/downloads and install it. The installer puts a short cut to the program in the Programs section of the Start menu. Run Virtual PC 2007, and the New Virtual Machine Wizard will appear. Click Next. Select Create a virtual machine, and click Next. You can now name your virtual PC. It's best to name it after the operating system it will run, as this makes it easy to distinguish between multiple virtual PCs. Click Next again.

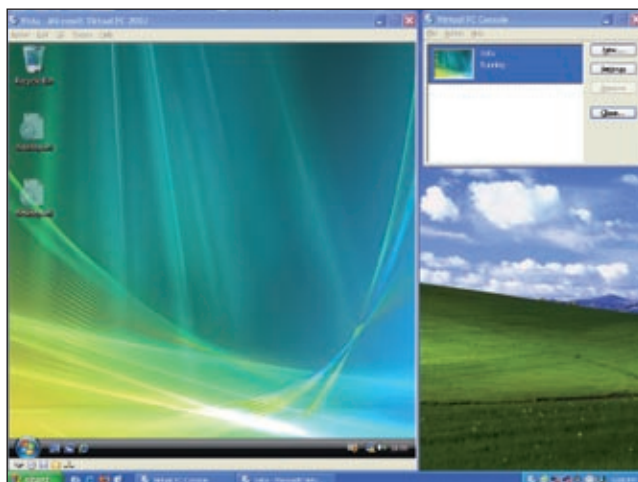
2 The next screen lets you select which operating system the virtual PC will run. Virtual PC 2007 has presets for all Microsoft's operating systems back to Windows 98, as well as IBM's OS/2. Each preset has a suggested amount of RAM that will be allocated to the virtual PC, as well as a set virtual hard disk size and sound card emulation type. If the operating system you want to install isn't listed, choose a preset with the approximate amount of RAM and hard disk space you need, or choose the Other option. You'll be able to change the memory and hard disk sizes later. Move

on to the next step. Virtual PC may prompt you to increase the amount of RAM allocated to the virtual PC depending on which operating system you chose. We'd recommend at least 512MB of memory for a Windows Vista or XP installation, but the more RAM you allocate to the virtual PC, the less the host PC has to work with. If you want to adjust the RAM, click the Adjusting the RAM radio button and set the amount of RAM using the slider. Click Next.

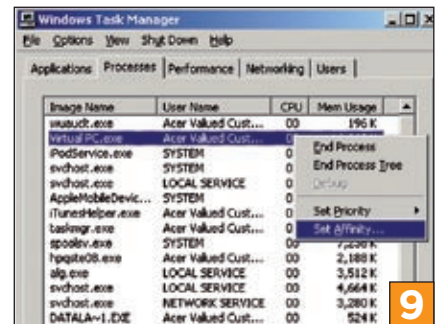
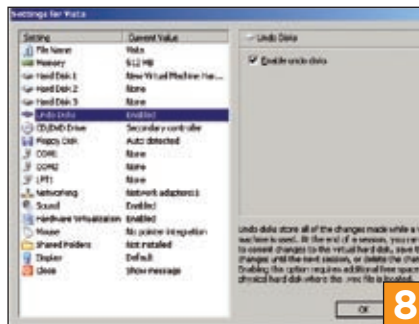
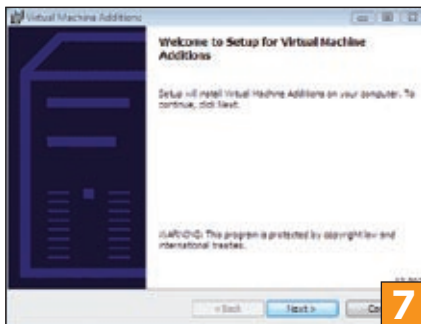
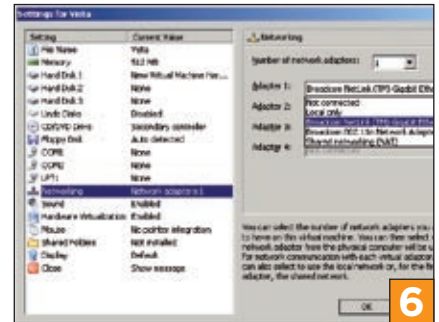
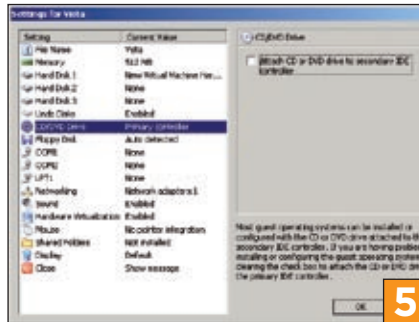
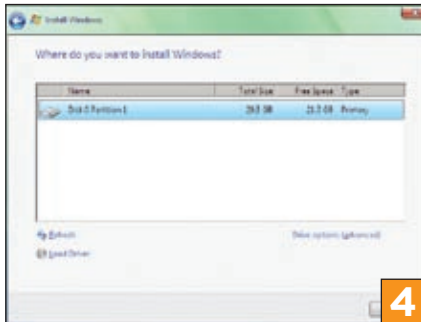
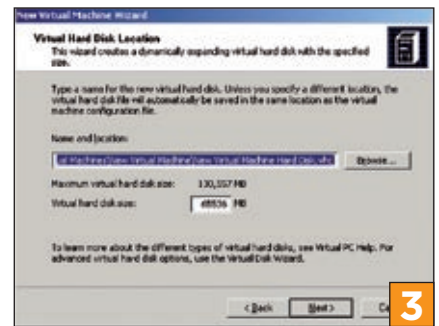
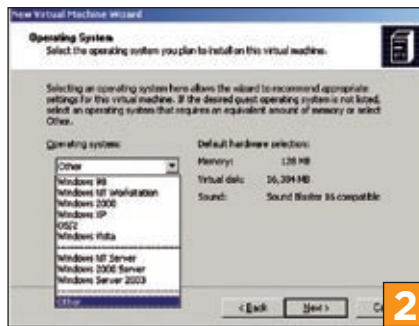
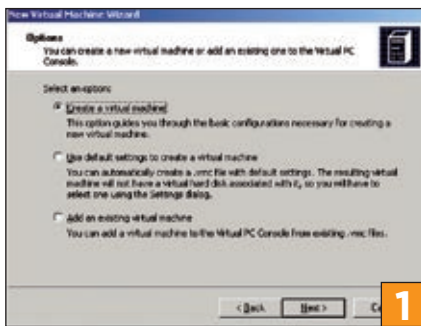
3 The next step is to create a virtual hard disk. The virtual PC will create a file on the physical PC's hard disk to emulate a disk within the virtual PC. You won't have any virtual hard disks yet, so click the radio button for A new virtual hard disk, then click Next. The next screen lets you specify where you want to put the virtual hard disk file, and how big you want it to be. You can leave the default location and hard disk name or specify your own. Virtual PC will suggest a hard disk size according to the type of operating system you selected earlier, but you can adjust the size by clicking in the box and entering the hard disk size in megabytes (remember that there are 1,024 megabytes to a gigabyte). Make sure the disk is large enough for your operating system and any programs you want to install. As a guideline, a clean Windows XP installation without any additional programs installed takes up around 2GB, while a new Windows Vista installation needs around 10GB. Once you've chosen your hard disk size, click Next and then Finish.

4 You now have the basics of a virtual PC, but you still need to install an operating system. The easiest way to do this is to boot from the operating system CD or DVD. The virtual PC can use the host PC's optical drive, so put your operating system disc in the host PC's drive. The disc may play automatically and start the operating system installer on your host PC – if it does, cancel the installation process. Now click on your virtual PC in the Virtual PC Console and click Start.

The virtual PC won't read your host PC's optical drive at first, so click on the CD menu in the virtual PC and click the Use Physical Drive option for the optical drive you want to use. Now click the Action menu and Reset, then click the Reset button in the dialog box that



◀ The finished result: a virtual PC running Windows Vista on a host PC running Windows XP



appears to confirm your decision. The virtual PC will boot from the system installation disc.

5 If the installer can't find the disc, you may need to change the optical drive options. Shut down the virtual PC by selecting Close from the Action menu. In the dialog box that appears, select Turn off. Now select your virtual PC in the Virtual PC Console and click Settings. In the left-hand tree, select CD/DVD Drive, then in the right-hand pane, uncheck the Attach CD or DVD drive to secondary IDE controller box. This forces your virtual machine to use its virtual primary IDE controller for the optical drive, which may solve your problem. Click OK and then Start. Your virtual PC should boot from the operating system disc and let you install your operating system. You may get a message about Virtual Machine Additions, but you can install those once your operating system is installed.

6 To install your operating system, follow the usual steps you'd take if you were installing it on a physical machine. Remember when running the virtual PC that if you click inside the PC's window it will capture your mouse pointer. Then it will work only within the virtual PC's window and not with the host PC. To release the mouse pointer, press the right-hand Alt key on your keyboard. By default, the virtual PC will run in a window. To go into full-screen mode, click the Action menu and click Full Screen Mode. When your virtual PC is running in full-screen mode, you won't be able to see any of the Virtual PC menus, but just press right-Alt and Return to go back to the windowed mode.

Now that your virtual PC is up and running with its operating system, there are a few things you need to do to get everything working. The first is to set up networking so your virtual PC can access the internet. If your virtual PC is on, turn it off by selecting Close from the Action menu and Shut down from the drop-down menu. Now select your virtual PC and click Settings. In the left-hand pane, click Networking, then in the right-hand pane click on the drop-down menu for Adapter 1. In the drop-down menu, select the name of the network adaptor that the host PC uses to connect to the internet, and click OK. The virtual PC should now be able to access the internet through the host PC's connection. You can make other changes in the Settings menu, such as sharing Serial and Parallel ports between the virtual and host PCs, but be aware that you'll only be able to change some of these when the virtual PC is turned off.

7 If your virtual PC is running Windows 95 or later, you can install Virtual Machine Additions. These make improvements to the virtual PC's graphics and mouse drivers, as well as some performance tweaks. To install the additions, click the Action menu, and select Install or Update Virtual Machine Additions. Once you click Continue, the virtual PC will mount a virtual CD image and run the installer automatically. If it doesn't, browse to the virtual PC's optical drive, open the VMADDITIONS disc and run the Setup file. In the Setup program, click Next to install the Additions. The installer will need to restart the virtual PC to finish installing the Additions.

8 If you plan to use your virtual PC to test software or visit websites that may prove unsafe, it's a good idea to set up Virtual PC's Undo Disks feature. When enabled, Undo Disks won't make any changes to the virtual PC's hard disk until you shut it down and confirm the changes. If something malicious damages your virtual PC's operating system, you can simply choose not to save the changes made, and your virtual PC will reboot as good as new. To enable Undo Disks, shut down your virtual PC, select it in the Virtual PC Console and click the Settings button. Select the Undo Disks icon in the left-hand pane, then click Enable undo disks in the right-hand pane. Click OK and start your virtual PC. Now when you select Close from the Action menu, you can deselect the Commit changes to the virtual hard disk box to discard any changes made to the virtual PC.

9 Finally, if you have a dual-core PC you can set the virtual PC to run exclusively in one of your processor cores. This preserves as much power as possible for the host PC, and helps if you want to run processor-intensive programs on the host while running a virtual PC in the background. In Windows XP, press Ctrl-Alt-Del to bring up the Task Manager. In Windows Vista, press Ctrl-Alt-Del and then click the Start Task Manager button. In Task Manager, click the Processes tab. After that, right-click on the Virtual PC.exe process and select Set Affinity. Untick the CPU box that you want to reserve for the host PC, and click OK. The virtual PC will now use only one of your processor's cores. **CS**